THE XX CENTURY

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THE ROADS OF AFRICA

In his speech on the twenty-fifth anniversary of the Bolshevist Revolution, Stalin did not say much about the Revolution which he was celebrating. Instead, he mentioned the phrase "second front" thirteen times and blamed the absence of it for the defeats of the Red Army in 1942.

The relations between the Soviet Union and its allies had reached such a degree of tension and lack of confidence during this autumn that the Anglo-Americans were forced to do something if they did not wish to lose their Russian ally, as they had once before, twenty-five years ago. Dieppe had taught them that they could not establish a second front in Europe. Their offensive against Rommel's armies undertaken towards the end of October from the Nile was not recognized by Stalin in his speech as a substitute for the "second front" and was almost completely ignored in the Soviet press. Something more important and more spectacular was necessary.

Although there is a wide field of action available on the Soviet western front for the large Anglo-American armies, the lack of confidence between the Bolshevist and capitalist partners of the "United Nations" is far too great for the employment of Anglo-American troops on Soviet soil to be possible for the time being. Hence Roosevelt and Churchill decided to direct their coup at the nearest and relatively least perilous objective. Their idea was to honor their promissory note to Stalin at the cost of the hapless French nation, to reach the Mediterranean and at the same time to save themselves the huge detour around Africa through waters infested with U-boats.

Today the eyes of the world are concentrated on North Africa. What prospects are there for a mobilization of this continent by the Allies? Since it is a question, not of mobilizing men or natural resources, but of mobilizing routes of communication, we are publishing a study of African problems of communication which has been in preparation for several months. We have not confined ourselves to those areas invaded early in November but have included all those parts of Africa which are likely to be of importance in this war. As far as we know, no such detailed study has yet appeared in print. The necessary material was supplied to us by various experts, among them Dr. Aulisio of Tokyo (a former high official in the Italian Colonial Service in Africa), a French specialist in African matters, and a German explorer who has crossed Africa by car.—K.M.

THE Anglo-American Allies had three possible ways of reaching the Mediterranean from the Atlantic without using the long, dangerous detour around Africa: (1) through French North Africa, i.e., Morocco, Algeria, and Tunisia; (2) through French West Africa, i.e., from the river systems of the Senegal and Niger northwest across the Sahara; and (3) through the "waist" of Africa, i.e., from the Gulf of Guinea to the Nile. We shall deal with the first two first, since they are closely related and are now in the limelight.

AFRICA—WHITE AND BLACK

French Africa is cut in two by the expanse of the Sahara Desert. Until recent years it could be considered as being made up of two distinct parts without any overland connection between them. Medieval Arab geographers have named these two parts "Blad-es-Sudan," country of the black people, and "Blad-es-Beidan," country of the white people.

In the north there is "White" Africa, which, from Morocco to Tunisia, shows a certain geographical unity, being a comparatively narrow strip between the coast in the north and the Atlas Mountains and the borders of the Sahara in the south. Nevertheless, it covers an area larger than that of France and Spain put together, with an average density of

population of thirty-eight inhabitants per square kilometer in Algeria, Tunisia, and Spanish Morocco, and fifteen inhabitants per square kilometer in French Morocco. This region is separated from Europe by a distance of only eight miles at the Straits of Gibraltar and of eighty-six miles between Sicily and Tunisia. It is joined to the Near East through Tripolis, which in ancient times was a much-used route of emigration and invasion, while the obstacle of the Sahara separated it from the rest of Africa.

On the other side of the Sahara begins tropical "Black" Africa. One of the chief differences between these two regions is to be found in their natural routes of communication. In "Black" Africa, the river systems of the Senegal and the Niger, navigable in part or according to season, were the main routes of European penetration; while in "White" Africa rivers are either nonexistent or not navigable. The nature and development of the connections in the interior were largely influenced by this fundamental difference.

MOROCCAN ZIGZAGS

From southern Morocco at the foot of the Atlas Mountains, whose eternal snows sparkle even in August under the African sun, from the palm groves of Marrakesh, a railway connection has gradually been established, section by section, to the Tunisian port of Sfax.

In Morocco there were at the end of 1911, 1,500 kilometers of narrow-gauge (60 centimeter) railway, which, although rendering good service, could not be anything but provisional and inadequate. The railway followed picturesque routes, and exigencies of low gradients as well as reasons of economy had obliged the builders—in some cases the French army engineering corps—to adopt, for certain mountainous parts of the line, sections made up of switchbacks, that is, straight sections of rail with switches at each end, so that the trains ran alternately backwards and forwards in a zigzag and thus laboriously climbed up the mountain side. So laboriously, indeed, that the passengers, who had got out at the beginning of this procedure, had plenty of time, after walking to the top, to watch this toilsome zigzag course, unless they were called upon to descend again and assist the locomotive to move the little carriages.

Gradually a normal-gauge network was developed from Casablanca via Rabat to Fez and was completed in 1925. It linked up with the Tangier/Fez line, which was completed in 1927. Then came the section Casablanca/Marrakesh in 1928, and finally in 1934 the connection from Fez to Ujda, where the Moroccan system was linked up to that of Algeria. From Ujda there is also a line running southward into the interior to Bou Arfa.

ALGERIA AND TUNISIA

In Algeria we note the successful carrying out of two successive railway programs. The first was laid down in 1857 and completed by 1890. It connected the ports of Oran and Algiers and followed the coast to the east. The second program, that of 1907, succeeded twenty years later in completing the railway network of Algeria with the construction of several lines running south (to Colomb Béchar, to Jelfa, and to Touggourt) and of others linking this network with Morocco and Tunisia.

In Tunisia there existed before the French Protectorate a short line in the neighborhood of Tunis, built by an Italian company, and the connection Tunis/Bône. By 1922 many new lines had been added, creating an efficient network along the coast as well as in the interior.

In this way, a transversal connection has gradually been created, materially uniting North Africa, of which it constitutes a sort of spine onto which are grafted the secondary sections that link up the parts with the interior and that are the beginnings of future transcontinental connections. "White" Africa, incidentally, has good coal deposits and ample water power, which has helped to electrify a large part of the railway system.

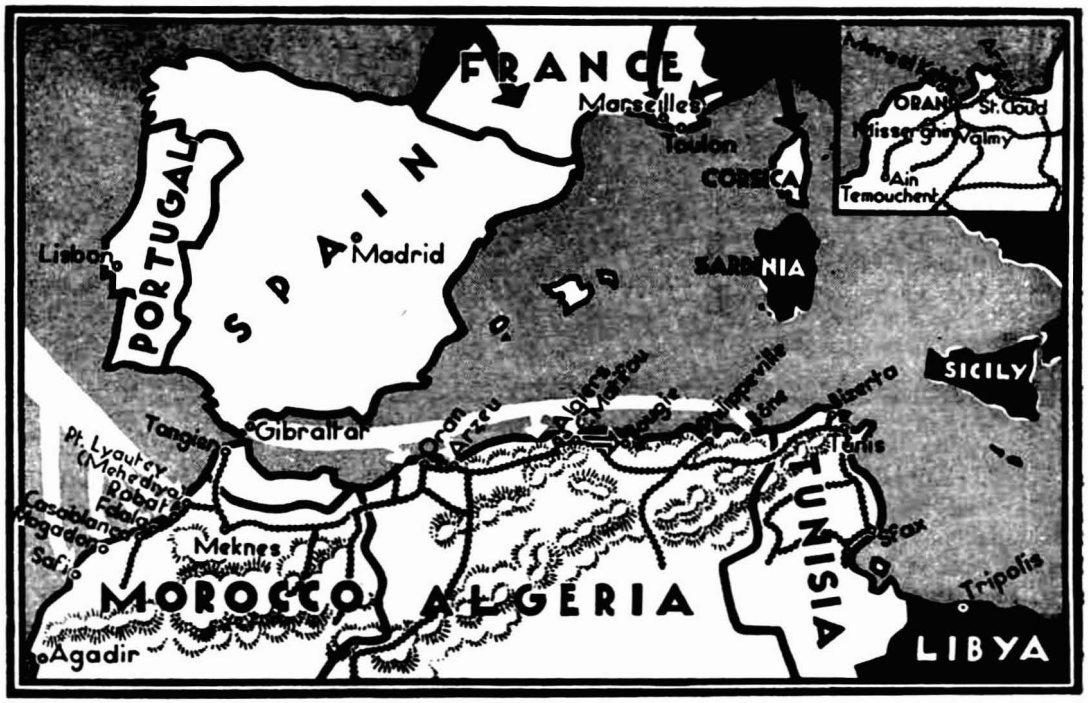
GOOD ROADS AND PORTS

Throughout almost its whole length, this iron network is paralleled by modern, asphalt-surfaced roads which allow of dense, swift motor traffic and of which there are so many that we could not show them on our map. This is particularly the case in Morocco, where the even contours and the absence of agriculture at the time of construction permitted some 4,000 kilometers of main roads and 2,500 kilometers of side roads to be laid out, usually perfectly straight and sufficiently broad. In Algeria there are 5,000 kilometers of excellent main roads and 25,000 kilometers of good side roads. In Tunisia, 5,000 kilometers of main roads, as well as tracks more or less well kept up, complete the road network of North Africa. Both the road and railway networks have been developed parallel to the progress of French penetration and according to the demands of the development and exploitation of the land.

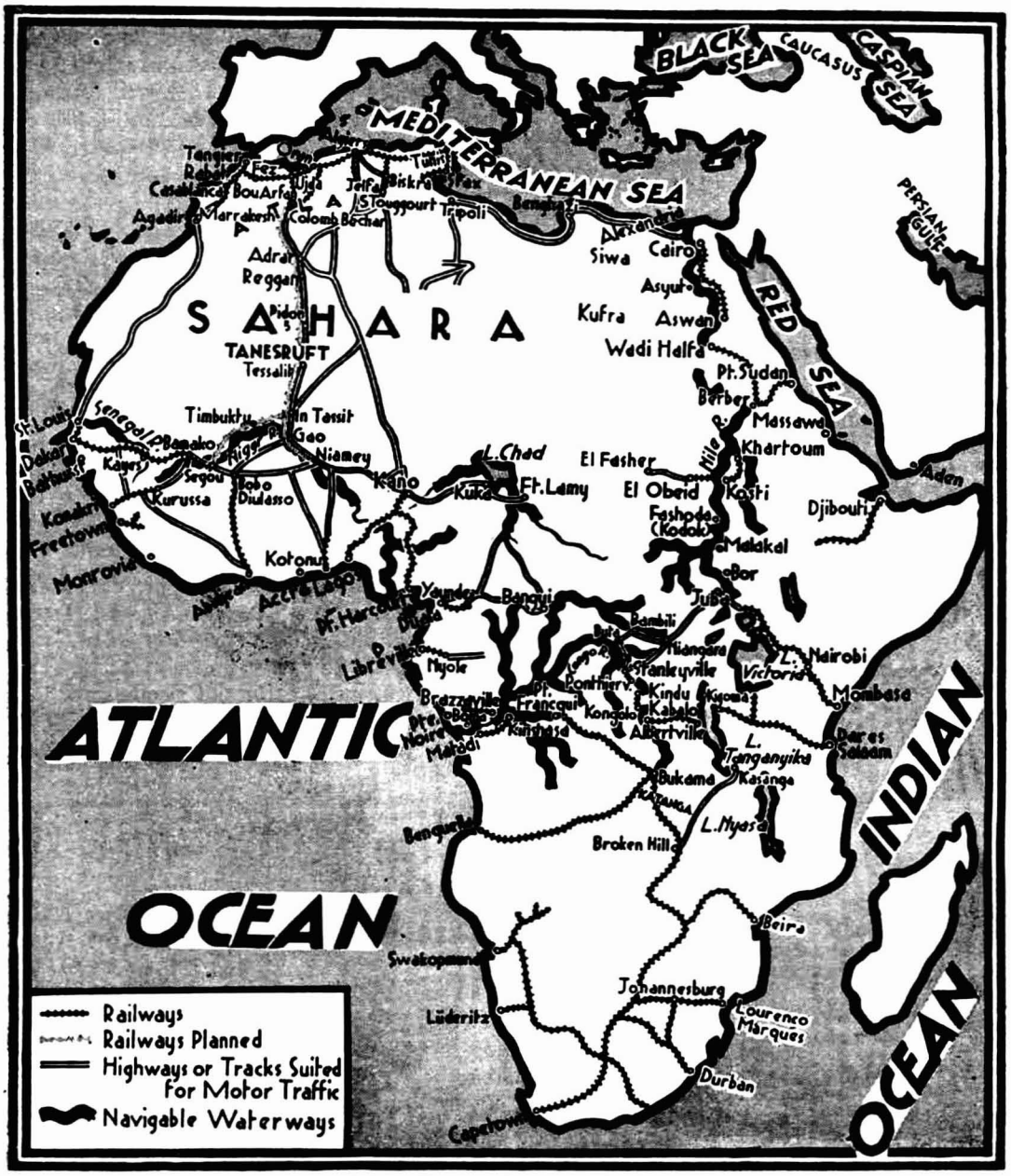
"White" Africa is served by a number of good ports. In Morocco, the ports open to trade before the Protectorate, as well as those which were added afterwards, were for a long time no more than open roadsteads where ships anchored offshore, while goods and passengers could only be loaded and unloaded by means of lighters. Casablanca did not become a large, modern port with deep-water berths until gigantic improvements had been carried out, among which were the construction of a seawall a mile and a half long and the installation not only of up-to-date equipment for the loading of phosphates but also of coal yards, grain elevators, and electric cranes. In 1939, Casablanca handled almost all of the 3,900,000 tons of Moroccan traffic, leaving only some 500,000 to 600,000 tons to Safi, Port Lyautey, and Agadir.

FRANCE'S GRANARY

In Algeria, the principal ports (all very well equipped) of Algiers, Oran, Bône, Philippeville, and Bougie, as well as numerous smaller ports, have a share in the ten million tons of goods imported or exported, that of Algiers and Oran being more than fifty per cent of this



American and British Invasion of French North Africa, November 1942



African Routes of Communications

amount. Tunisia has four well-equipped ports, Bizerte, Tunis, Sousse, and Sfax, the latter, thanks to its phosphates, handling more than half of the 3,800,000 tons of Tunisian trade.

Before the outbreak of the present war, approximately 86 per cent of the exports of French North Africa went to France. In view of the fact that practically all foreign trade has been stopped through the war, it can be assumed that almost the entire exports of these colonies went to France during the last two years. Besides phosphates and ores, the bulk of these exports was made up of foodstuffs and wine. For example, in 1936 the following were exported from Algeria and Tunisia:

1,000,000 sheep
519,200 tons cereals and cereal products
125,000 „ fruit and vegetables
16,000 „ tobacco
8,700 „ olive oil

The export of phosphates, which are urgently needed for French agriculture, amounted in 1936 to 563,000 tons. It can be seen from this that France depends to a considerable extent on her North African colonies for her food supplies.

Thus, on the whole, "White" Africa has been very well developed and opened up by a close network of lines of communications, so important in modern strategy.

TRACKS IN THE SAND

As we go to press, the picture in North Africa is too confused to enable us, on the basis of the many contradictory reports, to predict with any accuracy the further course of the Allied venture in French North Africa. But one thing is certain: even if events should take the most favorable turn possible for the Anglo-Americans, that is to say, if they should succeed in occupying all of French North Africa, it would be very difficult for them to ensure adequate supplies for their African expeditionary army in the face of the Axis strength in the Mediterranean. This has even been openly acknowledged by Winston Churchill and Colonel Frank Knox, US Secretary for the Navy, in recent statements.

For this reason, the question whether the Anglo-American troops in French North Africa can be supplied from the south, i.e., the regions of the Senegal and the Niger, by overland routes is of great importance. These routes lead across the Sahara.

The Sahara is one of the most formidable obstacles to traffic known anywhere in the world. Crossed by caravans, by nomads, and by bandits, along routes which varied according to the relatively greater or lesser safety of the journey as well as to the possibilities of the barter trade carried on in the past, it has seen the long treks gradually disappear, treks which were so difficult in the face of the aridity of the country and the almost complete absence of any resources.

The suppression of slavery and slave traffic removed with one stroke the mainstay of the trans-Sahara caravan trade. And now European penetration has radically changed the whole transportation system of the desert. Camels, formerly the only means of transport, lost favor, and the old caravan routes were one by one either changed or abandoned. The first crossings by motorcar were made in 1923 from Touggourt to Timbuktu and from Colomb Béchar to the Niger by Adrar-Ouassen and Tessalit. Today two regular motor lines through the center of the Sahara maintain the connections Algiers/Gao and Algiers/Kano. Thanks to the motorcar, the Niger is now only six days away from Algiers. These routes lead for thousands of kilometers through entirely uninhabited, lifeless desert. Water and gasoline must be brought from a distance and are stored at way-stations, called "*bidons*" (flask, tank). The most important of them, Bidon 5, and the desolate waste surrounding it, are shown in one of our photographs.

HEAVY GOING

Besides these, there is another motor route 3,500 kilometers long which connects Casablanca via Agadir and St. Louis with Dakar, leading through the western part of the desert and around Spanish Sahara (Rio de Oro). Formerly, this distance was covered by camel caravan in three months, whereas now it takes less than ten days by car. The first 500 kilometers south of Casablanca are a good motor highway, the rest is desert track. The reader should not assume that these desert routes are paved highways. For long distances, cars have to travel over wide expanses of hard-packed desert sand, with nothing to show the way but the tracks left by the preceding car. Consequently, it sometimes happens that a truck gets lost, especially after a sandstorm. To cope with this, a strict system of control is maintained at the various stops along the routes. The departure of every car

is telegraphed on to the next stop, and the next stop confirms its arrival to the preceding one. When a car is overdue, a search party is sent out and, if this fails, planes go out to look for the missing vehicle.

The fact that today there are motorcars driving along these trans-Sahara roads from "White" to "Black" Africa should not cause us to forget that traffic between "White" Africa (and beyond that, France and Europe) and "Black" Africa does not go by land but by sea. According to recent information from Vichy, some 50 tons of goods were transported every day in both directions by the desert routes. This is only a tiny fraction of the goods traffic between the two parts of French West Africa. The difficulties involved in transporting more are so great that Dakar, after the loss of its maritime connections, is practically cut off from France. Of course, the Sahara presents the same difficulties to everyone else, and if we consider how much trouble it has caused the French to send such small quantities across the Sahara, we can imagine how much more difficult it would be to send hundreds of trucks or even a whole army across.

There was an air route across the Sahara from "White" to "Black" Africa which led from Algiers via Bidon 5, Gao, Segou, Bamako, and Kayes to Dakar. Dakar was also linked with Algiers by an air route along the coast via St. Louis, Agadir, Casablanca (which had direct air connections with France), Rabat, Fez, and Ujda.

THE TRANS-SAHARA PROJECT

In 1860, Hanoteau prophesied: "Who knows whether one day steam, connecting Algiers with Timbuktu, may not bring the tropics to within six days of Paris?" From 1875 to 1928, the idea of a trans-Sahara railway has known alternating periods of enthusiasm and oblivion. In 1928, an "organization for the study of a trans-Sahara railway intended to connect North Africa with French West Africa" was created by law. But, in spite of the consulting committee established by the same law, in spite of the wishes of local bodies and chambers of commerce, and in spite of the demands of the supreme council of national defense, nothing was done. In 1934 in Vichy, a Congress of the French Radical-Socialist Party presided over at that time by Edouard Herriot (former President of the Chamber of Deputies who was recently placed in detention by the Government of Marshal Pétain) discussed among other things the trans-Sahara railway project and — condemned it.

And it was in Vichy again that, on March 22, 1941, a decree of Marshal Pétain's made up for errors formerly committed by ordering the immediate construction of this railway, adopting the route proposed in 1930. This route uses as its first section the existing line from Ujda to Colomb Béchar. From there on it leads through some oases to Adrar and Reggan, and goes as far as In Tassit, after a journey of 700 kilometers across the Tanesruft, the "Desert of Thirst," the driest part of the Sahara. There are 3,535 kilometers of railway line to be built, with few embankments or excavations, no tunnels, and only one bridge of any importance. Because of its extreme simplicity, the construction will not take more than three or four years. The employment of Diesel electric locomotives and the profile of the line will allow of an average speed of 60 kilometers an hour, which will mean a total of two days from the Mediterranean to the Niger.

The arc of the great circle that joins Europe to South Africa passes through Marseilles and Algiers and approximately coincides with the projected line, whose already existing or still to be constructed branch lines will open communications with South America through Dakar and with the Indian Ocean through Uganda.

DAKAR

The original French plan in West Africa was based on making use of the natural routes through linking up the navigable sections of the Senegal and Niger Rivers. But since the Senegal is

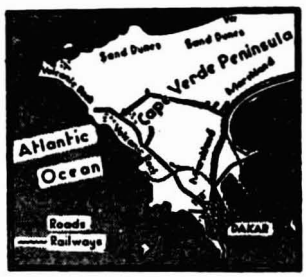
The straight line, the mark of the white man in the desert. Here the roadbed is being constructed for the tracks of the future Trans-Sahara Railway

RAILS ACROSS THE SAHARA

Bidon 5. A pylon, two planes in front of a gasoline depot, some de-wheeled sleeping cars on concrete blocks as living quarters in an endless gray-black expanse, completely flat, with the pitiless sun burning down on it twelve hours a day—this is what a future stop on the Trans-Sahara Railway looks like now

navigable only as far as Kayes from August 15 to October 15 and only for vessels with a draft of fifteen feet, it seemed more advisable to build a railway. The lines from Dakar to St. Louis (264 km.), opened in 1885, and from Kayes to Bamako on the Niger (555 km.), were the first to be built, the latter, although started in 1881, not being completed till 1904. Then a 667-kilometer railway connection from Dakar to Kayes was completed in 1923, and recently the line Bamako/Segou was built. Thus a railway, consisting of some 1,500 kilometers of uninterrupted rail, connects Dakar with Segou, bringing the Middle Niger within two days of the coast.

In view of the level contour of the country in the savannah region, the construction was comparatively easy, the only important obstacles being forest areas and the crossing of streams, which necessitated engineering feats that were sometimes of considerable extent. However, the absence of fuel offers a grave problem for the maintenance of the railway, a problem which can apparently only be solved by electrification and the use of vegetable fuels.



Dakar

The French coastal colonies between the mouth of the Senegal and of the Niger have various routes of penetration into the interior: in Senegal the route we mentioned above; in Guinea, that which connects the port of Konakri with the upper, navigable reaches of the Niger at Kurussa (extending over 662 kilometers, this line was completed in 1924); in the Ivory Coast, a railway connecting Abidjean across the jungle with Bobo Diulasso, destined to become an important junction for branch lines: one to Segou, where it will link up with the Trans-Sahara and Senegal Railways, and the other to Niamey on the Niger; and in Dahomey, several comparatively short lines from the coast to the interior.

All these lines were built to transport the various resources, mainly agricultural —peanuts, bananas, cocoa, palm oil— which can only be further developed in the same measure as the means of their transportation.

100,000 KILOMETERS OF ROADS

To those routes whose usefulness was questionable because of the absence of beasts of burden and because of the length of the journeys, automobile transportation has offered a new possibility of development. The network of roads in French West Africa has increased considerably within a very short time, growing from 15,000 kilometers in 1923 to 50,000 in 1928. In 1939 it consisted of more than 100,000 kilometers, running parallel to the existing railways or ensuring those connections which, though planned, have not as yet been linked up by rail. A part of these roads has been built firmly enough to be used throughout the year; but the greater part can as yet be used only during the dry season.

By these various routes— water, rail, and highway— four million tons are transported annually to the sea ports. Of this amount, Dakar alone absorbs 2,600,000 tons, depriving St. Louis, which is obstructed by the sand bar of the Senegal River, of its former position of a great port of Africa. The French ports on the Gulf of Guinea are only secondary ports, where loading and unloading operations are difficult in bad weather owing to the ships having to anchor in the open sea.

THE RACE ACROSS AFRICA

Beside the two routes from the Atlantic to the Mediterranean already discussed —through "White" and through "Black" French Africa—there are also possibilities for a west-east connection from the Gulf of Guinea to the upper Nile. The fact that there is no good railway connection on this route can be traced to the politics of that country which is today in urgent need of this cross connection—Great Britain.

The plan for a cross connection of this kind between the west and east coasts was not born only now from the present demands of Allied warfare. It originates from the time when France took up the fight for a west-east route through Africa from the Senegal River to French Somaliland against Cecil Rhodes' idea of the south-north Cape-to-Cairo route. The railway and road projects thrust forward from Cairo and Capetown were parried by the French with railways leading from Dakar into the hinterland of Senegal and from Djibouti in French Somaliland into the interior of Ethiopia. In the Sudan, on the upper reaches of the Nile, a territory which at that time was a political no-man's-land, the two lines had one day to cross. Hence the battle for the Sudan became the peak of Anglo-French tension. The world held its breath: Was France going to complete her empire from Dakar to Djibouti first, or England hers from the Cape to Cairo?

In 1896 began the historic race for the Sudan. The Englishman, Lord Kitchener, moved up the Nile with an Anglo-Egyptian force, while the French commander Marchand came marching from the west with his troops. When Kitchener arrived at Fashoda on the Upper Nile in September 1898, he found it in Marchand's hands. While the two forces lay opposite each other, waiting, the diplomatic war was raging between London and Paris. Who would win?

France in those years was, of her own desire, not free in her decisions. All her political considerations were influenced by the desire for revenge on Germany for the lost war of 1870. This revenge was not possible without the friendship of England. So France sacrificed the reality of the Nile for the dream of the Rhine. Today, France has neither the Nile nor the Rhine, and England has inflicted many a new Fashoda on her—in Syria, in Madagascar, in Equatorial Africa—and has now even invaded France's most important possessions, her colonies in North Africa.

AFRICA'S "BURMA ROAD"

While embittered France withdrew after Fashoda to continue to concentrate on her idea of revenge, England did much towards accomplishing her Cape-to-Cairo connection. But the irony of fate often sees to it that things turn out quite differently from what one expects: the north-south route across Africa established by England in dispute with France is today unimportant compared with the west-east line from West Africa to the Nile, in whose development France was hindered by England.

Ships from New York require two months to reach the Red Sea around the Cape of Good Hope, and less than half that time to reach the west coast of Africa. Today, shipping space is precious for the Allied powers. Consequently, the Anglo-American powers have made every effort to organize their supply lines via Central Africa. French Equatorial Africa is in the hands of de Gaulle, that is to say, in the hands of the Anglo-Americans; the Belgian Congo is also at their disposal, and neutral Liberia was recently occupied by them.

The occupation of Liberia has more than only strategic significance. When American troops landed in her capital, Monrovia, they symbolically revealed how far their country has moved from the traditional and proven principles of its foreign policy. Monrovia was named in honor of President Monroe, that American President whose name is a synonym for the view that the United States should not interfere in foreign spheres. As a commentator has recently remarked, America has replaced the Monroe Doctrine by the Monrovia Doctrine.

THE PORTS OF WEST AFRICA

What possibilities are open to the Allies after they have occupied long stretches of the west coast of Africa?

In order to find an answer to this question, it is first necessary to investigate the value of the ports at their disposal.

Those ports which might be useful as starting points for overland transport across the continent and accessible for large supplies of heavy war material are limited. Most African ports suffer from the absence of a sheltered anchorage and the lack of modern wharves. Besides up-to-date Dakar, there are only three fairly well-equipped ports: Freetown, which has an excellent, well-fortified harbor and a population of more than 50,000; Lagos, with a population of approximately 135,000 and a spacious, well-protected harbor for large liners; and Duala, situated on the estuary below the confluence of several large rivers, where steamers are berthed along the railway leading inland. All other ports are quite inadequate. Bathurst is situated on a swampy island and has a population of only 9,000. Monrovia lies at the mouth of the St. Paul River, which is blocked to large vessels by a formidable sand bar, so that these have to anchor in the open sea. The population numbers only 6,000. Accra, capital of the Gold Coast, has also only an open anchorage. Port Harcourt is situated on the Niger Delta and so boasts of a sheltered anchorage. Libreville in French Gabon is quite unimportant as a port and has a population of a few thousand only. Pointe Noire and Matadi are well sheltered, but landing facilities are poor and not equipped to handle large tonnages.

Spheres of Influence in Africa

THREE ROUTES TO THE NILE

In spite of the great development of air communications, it is nevertheless advisable to begin by examining the possibilities of the land routes. Not only can these latter generally transport far greater quantities of goods, but they are also indispensable for air communications—for the transportation of fuel and spare parts, for the building of airfields, etc.

On the Dark Continent there are today three routes of communications from west to east which have strategic importance for the Allies. According to their starting and terminal points, we shall call them the Nigeria/Sudan, the Cameroons/Sudan, and the Congo/Uganda routes.

The most northerly route runs via Lake Chad, which is accessible via the fairly good communication system of Nigeria and by a motor highway from Duala in the French Cameroons which turns north at Yaunde. Kano, about halfway to the lake, is connected by rail with Lagos and Port Harcourt; moreover, the lower Niger River is navigable from its mouth as far as the point where it strikes the railroad from Lagos. There is also a motor road (not indicated on our map in its westernmost section)

which runs parallel to the railway line from Lagos and continues on beyond Kano to Kuka. The most difficult section is that from Lake Chad to El Fasher, leading as it does through hilly desert country over a caravan trail some 1,200 kilometers long. From El Fasher, transport facilities consist merely of a motor road and only after El Obeid of a narrow-gauge railway. The problems involved can be surmised if one considers that, in order to transport the equivalent of a medium-sized steamer, 1,500 trucks or about 40,000 camels are required. The total distance from Lagos to Alexandria is about 6,000 kilometers.

RIVERS AND JUNGLE

A second overland route leads from Duala in the French Cameroons via Yaunde over a through motor road to Bangui, which is situated on the navigable part of the Congo system. River boats go upstream from Bangui to Niangara, which is linked with Juba on the upper Nile by a motor road. Over this route, too, the distances to be covered by motor vehicles aggregate some 1,500 kilometers, which tends to limit the capacity of the route considerably.

The third route passes through the Belgian Congo. This rich colony has been taken over entirely by the Allies, and on July 15, 1942, the Belgian ex-Prime Minister declared that the Belgian Congo was rapidly becoming an American road to the Middle East. No shipping is possible on the lower reaches of the Congo on account of its cataracts. Ships can only start from Stanley Pool, a vast pool formed by the river between Brazzaville and Kinshasa. Stanley Pool is linked with the coast by two railways, one running from Pointe Noire to Brazzaville and the other from Matadi to Kinshasa. Wood-burning river boats carry goods from Stanley Pool over a distance of 1,700 kilometers to Stanleyville on the Congo and to Buta, Bambili, and Niangara on its tributaries. All these places are linked up by motor roads, which in turn connect with the road leading from Niangara to Juba.

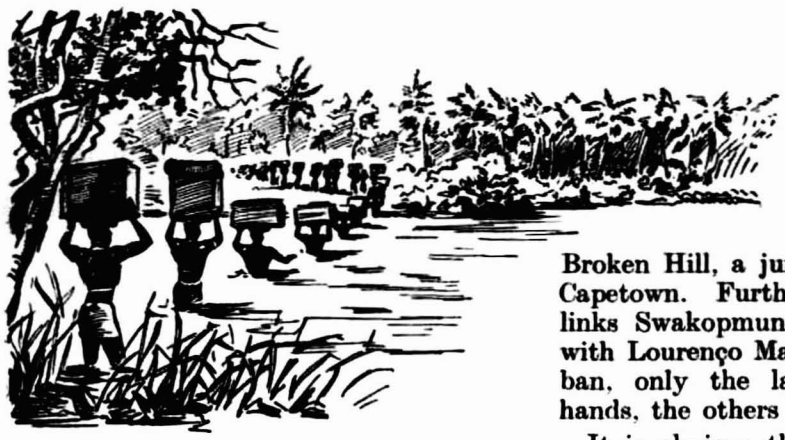
CONGO COMMUNICATIONS

At first sight, this route seems to offer considerable possibilities. However, the Congo region contains extraordinary difficulties for transportation. The most serious obstacle of the Congo system is to be found in the limited capacity of the narrow-gauge railways from the coast to Stanley Pool. They lead through extremely mountainous terrain over some 400 kilometers. As a matter of fact, the line from Pointe Noire had to be constructed because, even in peacetime, the Matadi/Kinshasa line could not handle the traffic, so that goods had to be stored for months in Matadi for lack of transportation facilities. This bottleneck was the main cause for a large portion of the country's exports, especially the copper from the Katanga district, being shipped by rail via the Portuguese colony of Angola to Benguella.

There are two more traffic arteries in the Belgian Congo, both ending in Stanley Pool. The first is a railway from the southeastern corner of the colony, a continuation of the line running northward from Capetown. It leads via Bukama to Port Francqui, whence river boats go down a Congo tributary to Stanley Pool. The other one runs from Bukama northward by way of another Congo tributary to Kongolo, where goods must be transshipped by rail to Kindu. There another reshipment takes place by boat to Ponthierville. The Stanley Falls further down the river must be circumvented by a railway to Stanleyville, whence Congo steamers carry the goods to Stanley Pool. All this necessitates frequent transshipment and makes transportation slow and very cumbersome. The combined capacity of these two routes, however, again depends on that of the two narrow-gauge railways from Stanley Pool to the coast.

CONSTANT TRANSSHIPMENTS

The traffic down the Nile valley through the Sudan is also faced by severe difficulties. From Juba, the Nile is navigable via Khartoum to Berber, although the vessels plying on the Upper Nile cannot carry more than a hundred tons. In



Berber, the cargoes must be unloaded to be taken by a narrow-gauge railway either to Wadi Halfa, 600 kilometers from Berber, where the Nile becomes navigable again, or to Port Sudan, some 400 kilometers from Berber, for shipment via the Red Sea. The total distance from Pointe Noire to Cairo via this route is about 7,200 kilometers.

Thus we may conclude that the chances for large overland supplies along these three routes from West Africa to the Near East and North Africa are rather slim. The third, the Congo/Uganda/Nile route, is the most important. But its transport capacity is very small since goods must constantly be transshipped from rail to ship to truck, etc. Moreover, the railway lines along the Lower Congo and the Middle Nile have a narrow gauge and hence a small capacity, and the Congo steamer fleet was never meant for large shipments. In addition to all this, the fuel for motor transport in the interior must be brought there over huge distances.

SECONDARY ROUTES

The remaining connections from the west to the east coast of Africa would not relieve the Allied shipping situation, which is, after all, the main object of an African "Burma Road." Nevertheless, in order to complete our study we shall briefly review these connections.

The two Congo arteries are linked with Dar es Salaam by a railroad leading from Kabalo to Albertville on Lake Tanganyika, whence steamers go to Kigoma, terminus of a railroad from Dar es Salaam. The Congo system is also connected by rail via Bukama with Broken Hill, a junction of the line from Capetown. Further south, another line links Swakopmund in Southwest Africa with Lourenço Marques, Beira, and Durban, only the latter being in British hands, the others in Portuguese.

It is obvious that the saving in shipping effected by using one of these routes for sending supplies to North Africa would be insignificant, since a large merchant tonnage would still be needed to negotiate the long, dangerous voyage along the east coast of Africa.

There is, of course, the Cape/Cairo route, 7,200 miles long, but this is entirely inadequate for transporting reasonably large supplies overland from south to north. Lake Tanganyika is reached from Capetown either at Albertville via Bukam or at Kasanga (on the southern shore of the lake) by truck from Broken Hill. The railroad Kigoma/Dar es Salaam has a branch line to the southern shore of Lake Victoria, which must be crossed by steamer in order to reach the railway and motor highway completing the connection with Juba. In all, the Cape/Cairo route consists of 4,650 kilometers of railway, 3,500 kilometers of waterways, and 1,300 kilometers of roads. Nine transshipments are necessary—five times from railway to steamer, twice from steamer to trucks, twice from railway to trucks, and vice versa. These frequent transshipments and the limited capacity of some parts of the route, especially the motor roads, seem to exclude the possibility of any large-scale utilization of it.

PLANES ACROSS THE DESERT . . .

Compared with the tremendous difficulties faced by land communications, the air traffic across Africa has somewhat better chances. Consequently, airplanes are being brought from America to the

Allied bases in West Africa. The Americans are, at least according to their own recent announcement, going to make Natal (on the northeast corner of Brazil, approximately on the same latitude as the mouth of the Congo) the biggest airport in the world. At the same time, airfields are being feverishly laid out or extended in such ports as Bathurst, Freetown, Monrovia, Accra, and Lagos. Even before the war there were well-developed airports in the interior of Nigeria, and the experience then gained by the British will now come in handy. In this connection we may recall the first massed flight right across Central Africa which was made by British planes in 1935 from Aden across the Sudan to Nigeria and on to British Gambia.

The air route Nigeria/Sudan leads via Lake Chad, which lies embedded among hills not more than 2,000 feet high. In contrast to other African lakes, it contains fresh water. Coming from Lagos, after a flight over dense jungle, high mountains, and deep gorges, one sees it lying in surroundings which, in their coloring and formation, announce the beginning of the desert. From Lagos to Lake Chad the distance is 1,350 kilometers as the crow flies; and the desert stretch from Lake Chad to Khartoum roughly 2,100 kilometers. Consequently, large bombers can fly the entire distance from Lagos to Khartoum without landing in between, unless there are unfavorable weather conditions. However, pilots must reckon with the latter in Africa, especially during the rainy season, for meteorological conditions there do not permit the simplest of all remedies for evading the inconveniences of bad weather, namely, flying over it. Meteorological formations in Africa rise to great heights, so that flying even at a height of 20,000 to 25,000 feet would not avail, while on the other hand considerable elevations of terrain must be crossed. All this allows of the assumption that there will be appreciable losses.

. . . AND THEIR LANDING FIELDS

In contrast to bombers, pursuit planes will not be able to dispense entirely with intermediate landings. A normal machine of this type carries fuel for 1,000 kilometers in its tank. For that reason, airfields at Lake Chad and between it and Khartoum are essential. Fort Lamy is the center of the de Gaullist forces and the most important of the airports on this route. It has already been bombed once by German planes.

As we have already seen, Kuka and Fort Lamy can be reached by railway, river boat, and motor road. The next airport to the east that has been opened up by communications is El Fasher, which is connected by a motor road with El Obeid. All transport between Lake Chad and El Fasher must, however, go by caravan trails, which are dependent on the seasons and can only be used at certain times because of the sandstorms, or by transport planes, which, besides war material, would also have to carry gasoline cargoes.

Beside the air route Lagos/Lake Chad/El Fasher/Khartoum, another possible air connection further south deserves attention. Here the ports of Duala and Libreville offer starting bases for planes, which could fly via Bangui or Niangara to Juba on the Nile, whence they follow the south-north route. As we have seen, there are railways and motor roads leading into the interior from Duala as well as from Libreville by which the necessary gasoline supplies could be carried. Bangui and the landing fields further east would have to obtain fuel by the steamers of the Congo system, perhaps even via the Nile, which is connected with Niangara by the motor road from Juba.

Still further south, Pointe Noire and Boma offer starting points for crossing the continent via Stanleyville to Juba. Intermediate points on this route could also be supplied by Congo shipping.

The chain of airfields along the Nile has been existing for years for the regular flights of the Imperial Airways. To the north of Juba, which is connected by motor road and railway with Nairobi and the port of Mombasa, this chain consists of the following landing fields: Bor, Malakal, Kosti, Khartoum, Berber,

Wadi Halfa, Aswan, Asyut, and Cairo. South of Juba the main airports are: Nairobi, Broken Hill, Johannesburg, and Capetown.

THE PROBLEM OF FUEL SUPPLIES

The supplying of fuel for the air line from West Africa to Egypt is comparatively easy in its eastern part. Besides the so far very modest oil production of Egypt, oil from Iraq and Iran can be obtained overland via Palestine and Egypt or by sea via the ports of Mombasa on the Indian Ocean and Port Sudan on the Red Sea, both of which are connected with the Nile by railway and motor road.

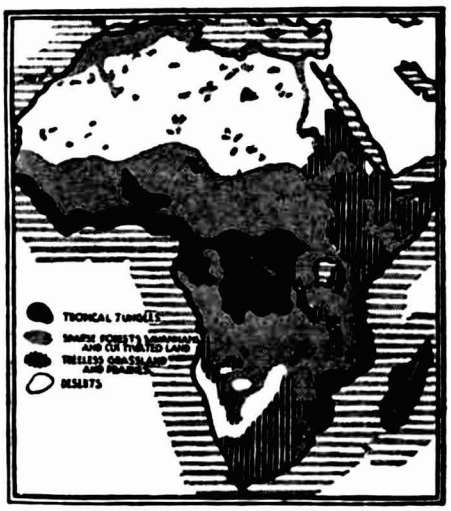
The situation on the west coast of Africa is far more difficult. The gasoline must be brought from America across the Atlantic in tankers, and the planes must cover a distance of over 3,000 kilometers before they reach the Nile. To transport an air fleet over this distance, hundreds of thousands of gallons of fuel are needed. This must be stored in readiness, in part in the airports of the west coast and in part at the intermediate landing fields, to which it must be transported with great difficulty.

It remains to be seen how much truth there is in the American claim that palm oil, of which there is an abundance in Central Africa, can be used in airplane motors. At any rate, it is not impossible for the Allies to bring American planes and certain lightweight war materials to the Nile by air over this route, although the difficulties involved are considerable.

NATURE'S OBSTACLES

So we see that the problem of communications in Central Africa is of a very complicated nature. The first glance at a map seems to show that the connection from West Africa to the Nile is a brilliant idea that can easily be made a reality. But as soon as one realizes that the distance from Lagos to Cairo is twice the distance from Madrid to Moscow and that the railwayless distance from Kano to El Obeid is as far as from London to Ankara, one understands that the vastness and unorganized state of the African spaces are a gigantic obstacle to all the programs so carefully figured out at the desks of Washington and London. The geographical realities of Africa cannot be removed by programs and blueprints. The Allies may build roads, railways, bridges, river boats, and airports. But all this must be done under the conditions obtaining in Africa, where Man, even modern, motorized Man, is only a pygmy.

In order to visualize the difficulties in Africa, one must bear in mind the climate and vegetation of the Dark Continent, which also affect the problem of an African "Burma Road." In the north our map shows the huge arid vastness of the Sahara lying between the Mediterranean and a line running across the continent from the west coast via Lake Chad to the Nile valley, the only exceptions being a fairly narrow belt of grassland and arable country in the northwest and a few oases. There is another large desert zone between the Nile and the Red Sea. The zones bordering on the Sahara are much exposed to sandstorms, which therefore affect the possibility of overland supplies from Lake Chad to the Sudan. And the vast expanse of the Sahara itself offers the most formidable barrier to any direct approach to North Africa from the south.



The Vegetation of Africa

The coastal regions along the Gulf of

Guinea and the Congo territory are covered with tropical jungle, with ample rainfall throughout the year which makes life for white people extremely unhealthy. Between the jungle and the desert zones lie savannahs, sparse forests, and cultivated land, where we find either two rainy seasons during the year or—in the south and in the easternmost corner opposite Arabia—only one rainy season.

The moist climate of Central Africa is ideal for mosquitoes, which accounts for the prevalence of malaria. Another deadly disease is sleeping sickness, which has depopulated large areas and to which the natives are particularly susceptible. Smallpox also causes great ravages among the negroes. The limited production of foodstuffs and the absence of cattle in regions infested with tsetse flies necessitate the almost complete provisioning of foreign troops with imported food supplies.

THE ALLIES AND THE THREE ROUTES

Thus we have shown the three routes which the Allies could take from the Atlantic to the Mediterranean if they did not want to go around the Cape. The one we have dealt with last, the route through Central Africa, was the one first to be employed by the Allies. It was probably conceived in 1941, and its development was seriously undertaken as early as the beginning of 1942, immediately after America's entry into the war. It is very probable that the Allies, in spite of their hopes to find a far more direct approach to the Mediterranean through French North Africa, will continue to develop the route through Central Africa in order to be prepared for any event.

The possibilities of an advance of the Allies over the routes of "Black" Africa were the second to attract world attention. This happened when the landing of American troops in Liberia and at other points on the north coast of the Gulf of Guinea became known in the late summer of 1942. These were the months in which Dakar was mentioned as the most likely goal of Anglo-American aggression in Africa. After the events of November 1942, one is justified in assumming that a part of the publicity given to Dakar was intended by the Anglo-Americans themselves, first in order to distract Vichy's attention from North Africa, where the attack was actually to take place, and secondly, in the hope, through the appearance of strong American troop detachments on the borders of the French colonial empire, to influence France in her attitude toward the Axis.

For months the Anglo-Americans have been trying to lure France away from the rising new Europe. A few weeks ago they revealed their intentions more clearly than before, when Walter Lippman, one of the leading political authors in America, in an article appearing on October 30, 1942, in the *New York Herald Tribune* advised France to reorientate herself and to enter the war again at the side of the USA and England. Perhaps the landing of Allied troops and arms in the vicinity of French West Africa had more significance as a military demonstration intended to influence Vichy than as a preparation for attack.

The third possibility, the thrust through North Africa, was hardly discussed in the press, and it seems as if the Anglo-Americans have succeeded in deceiving the French Government and colonial administration as regards their real intentions and in finding them more or less unprepared for the sudden attack in November.

* * *

Since operations are still continuing as we go to press, it would be premature to speak about the success or failure of the Anglo-American action. We have purposely limited ourselves in our article to fundamental questions and have not dealt with the details of the fighting of the last few days. (The Anglo-American landings are shown on our map on p. 373.) But there is one thing that must be said concerning the Anglo-American attack.

It is a tragic fact that war has as a rule little to do with morality. However, there was nothing in this war of which future generations in England and America

should be more ashamed than the attack on the French colonial empire in Africa. For in this case the attack was directed, not only against the prestige and power of France—as in Syria and Madagascar—but against her very life. We have already pointed out to how great an extent France was dependent, even in times of peace, on food supplies from her African colonies. As a result of the anti-European blockade of the Allies, this dependence of France has become far more serious. By staging an attack against these colonial territories, Washington and London have done something which, should they succeed, will expose millions of French people to starvation.

The guilt of Roosevelt and Churchill is the greater since their action is directed against their former ally, France, whose heroic fight in 1914 to 1918, symbolized by such names as that of Pétain, helped them to win the first World War against Germany, and who in 1939 was induced for the second time to become the sword of the Anglo-American policy against Germany.

We need not deal with the excuse with which Roosevelt tried to cloak his aggression, namely, that he had to forestall a German invasion of the French colonial empire. For more than two years, the Axis did not make use of the opportunity of marching into the colonial empire of defenseless France. Moreover, Churchill himself dismissed Roosevelt's pretext when he declared in his speech at the Mansion House on November 11: "We come to North Africa for the sole reason of capturing a favorable starting point for a new front against Hitler and Hitlerism."

Since her collapse in 1940, France, under the leadership of Marshal Pétain, has done everything in her power to keep out of further war entanglements and, like Germany, faithfully to adhere to the terms of the armistice. She put up with countless infringements of her territory and her honor by the Anglo-Americans without abandoning her neutrality, in the hope that in this way she would succeed in keeping out of the war. In the years since Compiègne, she applied herself, under the most difficult conditions, to her own reconstruction and to the healing of her wounds. But this was of no avail. The attack on Morocco and Algeria and the natural countermeasures on the part of the Axis have for the second time involved her in the same world war and, in the midst of a difficult domestic rebirth, exposed her to new suffering.

But just as every deed has more than one result, the North African adventure of Roosevelt and Churchill has brought about something that is good. By making North Africa a vital battlefield for France as well as for the Axis, it has brought France closer to the new Europe.